

Analysis of Essential Programs and Services Components:
Gifted and Talented Education

Report to the
Maine Department of Education

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EPS Component Review: Gifted & Talented (G&T) Education

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EPS Component Review: Gifted & Talented (G&T) Education

Introduction

Maine's Essential Programs and Services (EPS) funding model for preK-12 education was developed to estimate the minimum amount of money a school district needs in order to provide a basic education. The goal of EPS is to provide equitable funding so that all students receive adequate educational programs and services, and have an opportunity to achieve the Maine Learning Results standards.

There are multiple components within the EPS cost model, and each is reviewed on a regular cycle to determine whether the model criteria need to be updated or amended to reflect changes in school needs. The current report is an analysis of the model component for funding Gifted and Talented (G&T) education. G&T education is currently funded as a separate and discrete element in the overall cost model. Unlike nearly all of the other elements within the EPS formula, the G&T component is not based on a cost model. Instead, G&T education is funded on an expenditure basis. School districts must annually submit a plan describing how they will provide G&T services in the coming academic year, including a proposed budget for the program. They then receive a funding allocation based on their approved budget. If their spending for G&T programs in the most recent fiscal year was less than their proposed budget after adjusting for inflation, the district's allocation is adjusted downward to their actual expenditure amount plus an inflation factor.

Thus, the G&T funding allocations are essentially based on expenditures. Expenditure models are inconsistent with the adequacy-based funding philosophy, because funding is based on how much a district is able to spend rather than on what their students need to have access to adequate programs. Districts with a wealthier property tax base are generally able to raise more funds for educational programs, and thus receive more funding than higher-poverty districts, in an expenditure based system. This runs contrary to the goals of student equity. The primary purpose of this report is to analyze the current funding patterns based on the existing method, and to explore options for a more evidence-based approach for funding G&T programs.

Background

National Funding Trends

As with many aspects of school funding, policies and practices for funding Gifted and Talented education programs vary widely from state to state. Although G&T was identified in the No Child Left Behind Act (NCLB) as students “who give evidence of high achievement capabilities in such areas as intellectual, creative, artistic, or leadership capacity, or in special academic fields, and who need services or activities not ordinarily provided by the school in order to fully develop those capabilities,” there are no federal guidelines about funding G&T programming.¹ In some cases, states support the full amount of G&T programming, whereas in others, the state provides little or no financial support. According to the Council of State Governments (2015), the variation in funding is distributed as shown in Table 1.

Table 1: State-to-State Variation in Gifted and Talented Programming/ Funding²

Number of States	Programming Mandated?	Portion of Funding Provided by State
4	Yes	Fully Funded
23 (Including Maine)	Yes	Partially Funded
8	Yes	No Funding Available
6	No	Available State Funding
9 + Washington DC	No	No Funding Available

Nationwide, over half of the states—including Maine—have mandatory G&T programming which is at least partially funded through the state. According to the National Research Center on the Gifted and Talented (2014), the majority of school districts, nationwide, rely on local funding to at least partially support G&T programs.³

As of 2014-2015, according to a report released by the National Association for Gifted Children and the Council of State Directors of Programs for the Gifted (2015), of the states that do provide districts with some or all of the funding for G&T programming, over half (55%) used

¹ National Association for Gifted Children, *Frequently Asked Questions about Gifted Education*,

² Council of State Governments Capitol Research, *State Variation in Gifted Education, Funding and Services*.
http://knowledgecenter.csg.org/kc/system/files/CR_Gifted_Education_Funding_0.pdf

³ National Research Center on the Gifted and Talented (2014), *National Survey of Gifted Programs*, Curry School of Education: University of Virginia.
<http://www.nagc.org/sites/default/files/key%20reports/2014%20Survey%20of%20GT%20programs%20Exec%20Summary.pdf>

a formula allocation. Most commonly this is based on a weighted student formula in which districts receive funding for each student identified for programs.⁴ Others provided funding directly to the district for services or through a general allocation process. Eighteen percent (18%) of states provided grants to districts to support G&T funding. Seven states had a cap or ceiling on the amount of state funds that can be distributed for G&T programming. Table 2 provides examples of state funding methods from 2015.

Table 2: Examples of Funding Methods for Gifted and Talented Services

State	Weighted Formula
Georgia	A weight of 1.6597 is provided for students in programs for the gifted.
Hawaii	An estimate of 3% of a school's total population is used to determine the number of potential G&T students. This equates to an additional weight of 0.0265 for all identified GT students.
Minnesota	Gifted & talented revenue is included in the general education revenue program. A district's G&T revenue equals \$13 per weighted Average Daily Membership (ADM).
Oklahoma	G&T weighted in the equalizing formula at 0.34.
Wyoming	The funding model provides \$29.41 per Average Daily Membership (ADM) for G&T.

National Policy

The federal role in gifted and talented programming is minimal. There is no federal law requiring schools to identify gifted and talented students or provide services for gifted and talented students. The federal government's role in the education of gifted and talented students is limited to legislative reminders that these students should not be overlooked, and making available a relatively small amount of funds to be used to figure out what works when it comes to gifted and talented programming.⁵

The Jacob Javits Gifted and Talented Students Education Act (Javits) was first passed by Congress in 1988 as part of the Elementary and Secondary Education Act and was most recently

⁴ National Association for Gifted Children and the Council of State Directors of Programs for the Gifted (2015). <https://schoolfinancesdav.files.wordpress.com/2015/04/gifted.pdf>

⁵ <https://blogs.tip.duke.edu/giftedtoday/2011/08/15/state-and-federal-government-definitions-of-giftedness/>, <https://www.nagc.org/resources-publications/resources/frequently-asked-questions-about-gifted-education>, <https://www.nagc.org/information-publications/gifted-state>, <https://www.nagc.org/get-involved/advocate-high-ability-learners/nagc-advocacy/federal-legislative-update/every-student>

reauthorized through the ESSA⁶. Javits is focused on identifying and educating gifted and talented students who are traditionally underrepresented in gifted and talented programs, particularly minority, economically disadvantaged, English language learners, and students with disabilities. After almost defunding the program, Congress voted to fund the Javits program at \$12 million for FY19, the same amount of funding received in FY2018. It is the only federal program dedicated specifically for gifted and talented students. The money is used to fund demonstration projects and support research into what works and does not work for gifted and talented students, and then to make sure the results get disseminated to teachers.

The federal government first mentioned gifted and talented in the Education Amendments of 1969, defining these students as those who have “outstanding intellectual ability or creative talent.” Over time, the federal definition of gifted and talented has been modified and broadened.⁷ However, there is no federally mandated standardized definition or recommended guidelines regarding specific tests or other methods to be used to identify students who are gifted and talented.⁸

The Every Student Succeeds Act (ESSA) of 2015 did two things regarding gifted and talented education: (1) continued the Javits Gifted and Talented Students Education Program, and (2) added some new provisions that address data collection and reporting and the use Title I and Title II funds. Specifically, in addition to reporting how many students performed at the proficient and below proficient levels, states and districts now have to report information on students achieving at the advanced level. ESSA also specifically says that Title I funds can be used to identify and serve gifted and talented students. ESSA also added gifted and talented students to the rules around Title II funding. ESSA states that Title II professional development funds must be used to improve the skills of teachers and other school leaders in ways that will serve *all* students, “including children with disabilities, English learners, and gifted and talented students.” Then, when it lists permissible activities on which Title II funds may be spent, it

⁶ <https://www2.ed.gov/programs/javits/index.html> , <https://www.nagc.org/resources-publications/resources-university-professionals/jacob-javits-gifted-talented-students>

⁷ <https://journals.sagepub.com/doi/abs/10.1177/107621759201500115?journalCode=gctb>
<https://www.state.gov/m/a/os/44036.htm>

⁸ <https://blogs.tip.duke.edu/giftedtoday/2011/08/15/state-and-federal-government-definitions-of-giftedness/>

includes professional development that improves teachers' ability to identify gifted and talented students and develop and tailor instruction based on the those students' needs.⁹

Note, these new provisions in ESSA were taken from the TALENT Act (To Aid Gifted and High-Ability Learners by Empowering the Nation's Teachers Act, 2013), legislation introduced in both the House and the Senate by a bipartisan group of policymakers in 2015. To date, the bills have not been acted upon.¹⁰

Equity

Nationwide, persistent questions remain about the equity of G&T supports in public education. According to Loveless et al. (2008), low income and minority students do not participate in G&T programs at the same rate as their peers.¹¹ This is partly due to identification bias, but also programmatic gaps. Districts that have higher proportions of non-white or low-income students tend to have fewer G&T programs. According to Woods (2016), Black students nationwide, for example, are less likely to attend schools with gifted programming.¹² Thus, a component of the equity gap is rooted in access. This suggests that additional state mandates, oversight, and/or funding could help to improve equitable opportunities to participate in programs.

In order to improve equity in G&T programs, many also point to reforming identification procedures, and supporting funding for programs in districts with substantial underserved or disadvantaged populations. Woods (2016) specifically addresses issues of equity in identifying students. She cites that universal screenings for G&T “has been shown to have a significant positive effect on the identification of Black and Latino gifted students.” In addition, utilizing alternative assessments (bilingual verbal ability tests, portfolios, or interviews, for example) can increase the representation of minority groups in G&T programs.

⁹ <http://www.nagc.org/get-involved/advocate-high-ability-learners/nagc-advocacy/federal-legislative-update/every-student>

¹⁰ <https://www.congress.gov/bill/113th-congress/senate-bill/512>, <https://www.congress.gov/bill/114th-congress/house-bill/2960/>

¹¹ Tom Loveless, Steve Farkas, and Ann Ducett (2008), *High-Achieving Students in the Era of NCLB*. Washington DC: Fordham Institute. http://www.nagc.org/sites/default/files/key%20reports/High_Achieving_Students_in_the_Era_of_NCLB_Fordham.pdf

¹² Woods, Julie (2016). *Policy Analysis: State and Federal Policy Gifted and Talented Youth*. Education Commission of the States.

Gifted and Talented Programming in Maine

Gifted and Talented Education Policy

Chapter 104 of the “Rule Chapters for the Department of Education” mandates the establishment of G&T programming, stating, “Maine law requires school administrative units to establish educational programs for G&T children by 1991-1992 in the schools of the unit.”¹³ Under these rules, it is left up to the SAU to determine how to identify and provide programs for those students. In order to receive state support for G&T programming, SAUs must apply for approval on an annual basis: “Approval status shall be awarded when the Commissioner determines that the program complies with all approval standards related to the degree of implementation of the program. Upon obtaining approval by the Commissioner, the school unit shall be entitled to operate the G&T program and to receive State subsidy aid in order to implement the program.” Rule Chapter 104 further defines “Gifted and Talented” as follows:

Gifted and talented children" shall mean those children in grades K-12 who excel, or have the potential to excel, beyond their age peers, in the regular school program, to the extent that they need and can benefit from programs for the gifted and talented. Gifted and talented children shall receive specialized instruction through these programs if they have exceptional ability, aptitude, skill, or creativity in one or more of the following categories:

1. General Intellectual Ability as shown by demonstrated significant achievement or potential for significant accomplishment above their age peers in all academic areas
2. Specific Academic Aptitude as shown by demonstrated significant achievement or potential for significant accomplishment above their age peers in one or more academic area(s)
3. Artistic Ability as shown by demonstrated significant achievement or potential for significant accomplishment above their age peers in the literary, performing, and/or visual arts

¹³ State of Maine, Rule Chapters for the Department of Education, ch.104
<https://www.maine.gov/sos/cec/rules/05/chaps05.htm>

NOTE: Children with exceptional General Intellectual Ability and/or exceptional Specific Academic Aptitude usually comprise five percent of the school population. Students with exceptional Artistic Ability usually comprise five percent of the school population. Children in the top two percent of the school population may be considered highly gifted. (MDOE, 1996).

While the above definition of Gifted and Talented uses an often-cited “five percent” rule of thumb for identifying G&T students, it is not a requirement. Furthermore, it may be interpreted variously as referring to the top 5% of the students in a school, district, or the state. Depending on which group is used for comparison, an individual student may or may not be deemed eligible for G&T programs. Finally, districts vary in the processes and instruments they use to identify a child as G&T. Common tools include the results of annual state assessments, district-administered universal screening assessments such as NWEA tests, supplementary assessments such as the CoGAT exam, and teacher nomination. The combined effect of these policy decisions determines the overall proportion of students in a given district that qualify for programs. School districts must describe their processes for identifying G&T students in their annual applications for state funding.

Funding Application Process

As noted above, the application process involves districts submitting their G&T program plans, including budgets, to the state office for review and approval. Table 3 summarizes the status of the 194 SAUs that operate schools; an additional 57 SAUs do not operate schools and thus do not have G&T programs.

Table 3. FY2018 Approved Budgets for G&T Programs

	Number of SAUs	Percent of SAUs
Approved Application, Funding Allocated	152	78%
Approved Application with Budget of \$0	8	4%
No application submitted or Not approved	10	5%
Waiver	24	12%

Data Analysis & Findings

Analysis Methods

Analysis of G&T program spending involves three data sources: annual expenditure reports, annual reports of total attending student enrollment as of October 1, and annual reports of the numbers of students identified as gifted and talented in Intellectual Ability or Artistic Ability. Annual G&T expenditures are isolated by the amounts reported under Program code 4900 (Gifted and Talented Programs) combined with Function 1000 (Regular Instruction) or 2700 (student transportation). School districts varied in their reporting practices, and there were examples of SAUs that reported G&T spending but did not report any students identified as G&T, and vice versa. Table 4 summarizes the patterns of data reported by all Maine SAUs that operate schools.

Table 4. SAU G&T Expenditure and Enrollment Data Reporting, AY2017-18

	Number (Percent) of SAUs	Total Number of Attending Students	Number of Attending G&T Students
Districts Reporting G&T Expenditures and attending G&T students	112 (73%)	143,894	7,564
Districts Reporting G&T Expenditures but zero G&T students	41 (27%)	17,823	0
Districts Reporting zero G&T Expenditures but did report G&T students	5 (13%)	4,970	183
Districts Reporting zero G&T Expenditures and zero G&T students	34 (87%)	6,649	0
Overall State Total	192 (100%)	173,336	7,747

The 41 districts that reported expenditures but no attending G&T students had a combined \$1.17M in expenditures. Of these, 23 districts had G&T expenditures over \$10,000, and thus appear to be operating substantive G&T programs. This raises questions about how these districts are defining, identifying, and reporting their G&T pupils. In addition, analysis of G&T expenditures yielded unexpectedly high spending per G&T pupil for Brunswick and RSU 23 (Old Orchard Beach). Upon further investigation of their approved gifted and talented education program plans, both SAUs are using an inclusion model for providing G&T services via

differentiated instruction in the general classroom; each district reported only two attending G&T students in AY2018.¹⁴ As with districts reporting zero G&T students, these two cases also suggest there is variation in the methods districts are using to identify and report G&T students. These outlier cases were excluded from analyses of spending per G&T pupil.

Five districts reported about \$93,500 in combined expenditures related to administrative oversight and instructional support of G&T programs (functions 2210 and 2330); these are not considered to be costs for G&T program delivery and are excluded from calculations. In addition, certain districts were excluded as they have been determined in prior analyses to have atypical spending patterns, including charters, Maine Indian Education districts, and island districts.

The resulting data were then used to describe overall spending patterns, levels of district spending per total pupils, and levels of district spending per attending G&T pupil. In each analysis, only districts reporting the applicable data are included. For example, districts without reported expenditures are excluded from all per-pupil analyses, and those with attending students but no reported attending G&T students were excluded from per-G&T pupil analyses (as the expenditures cannot be divided by zero students). The following sections depict the results of these analyses.

Demographic Enrollment Trends

Based on 2018 enrollment data, 4.2% (n=7,747) of all Maine students are identified as gifted and talented. Figure 1 displays the number of students identified as gifted and talented by grade.

¹⁴ <http://www11.maine.gov/doe/sites/maine.gov.doe/files/inline-files/Brunswick%20GT%20App%2017-18%20Approved.pdf>; <https://www.maine.gov/doe/sites/maine.gov.doe/files/inline-files/RSU%2023%20GT%20App%2017-18%20Approved.pdf>

Figure 1: Number of G&T Students by Grade, statewide (2018)

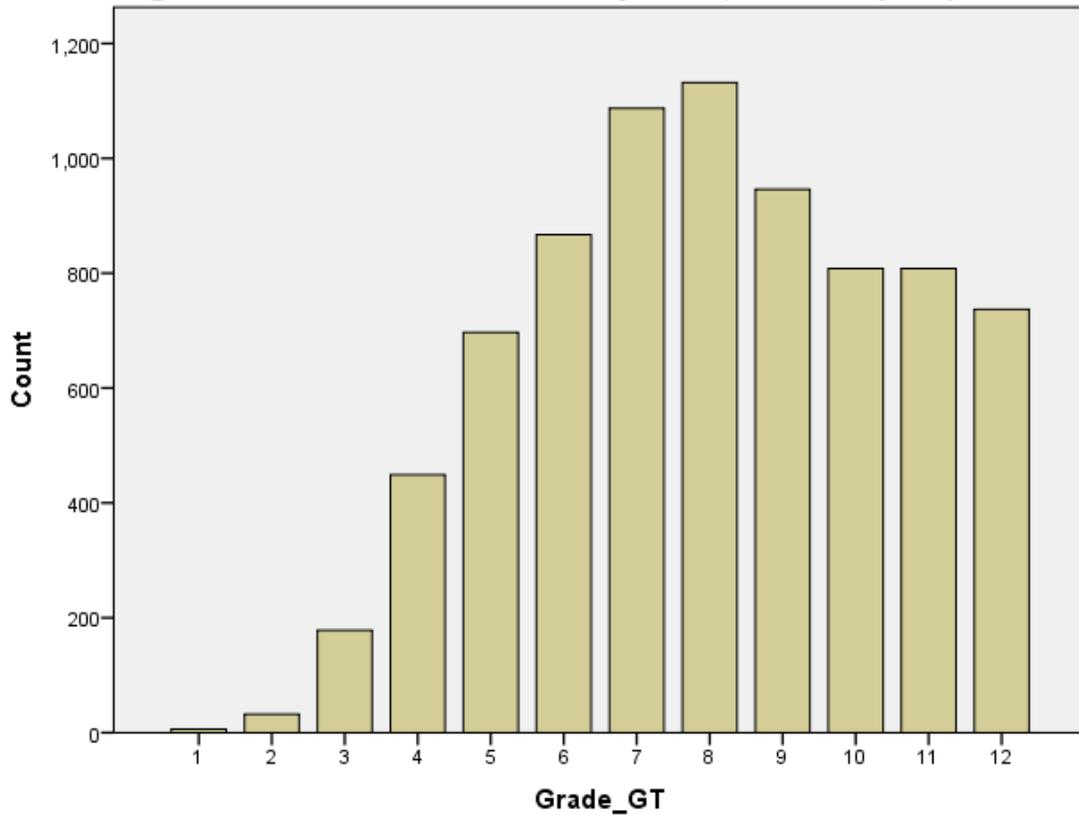


Figure 1 indicates that between grades 3-8, as the grade level increases, so does the proportion of students enrolled in G&T programs. At high school, it drops down again slightly. Overall, however, the percent of G&T enrollment goes up over time—possibly in part because of additional opportunities for identification.

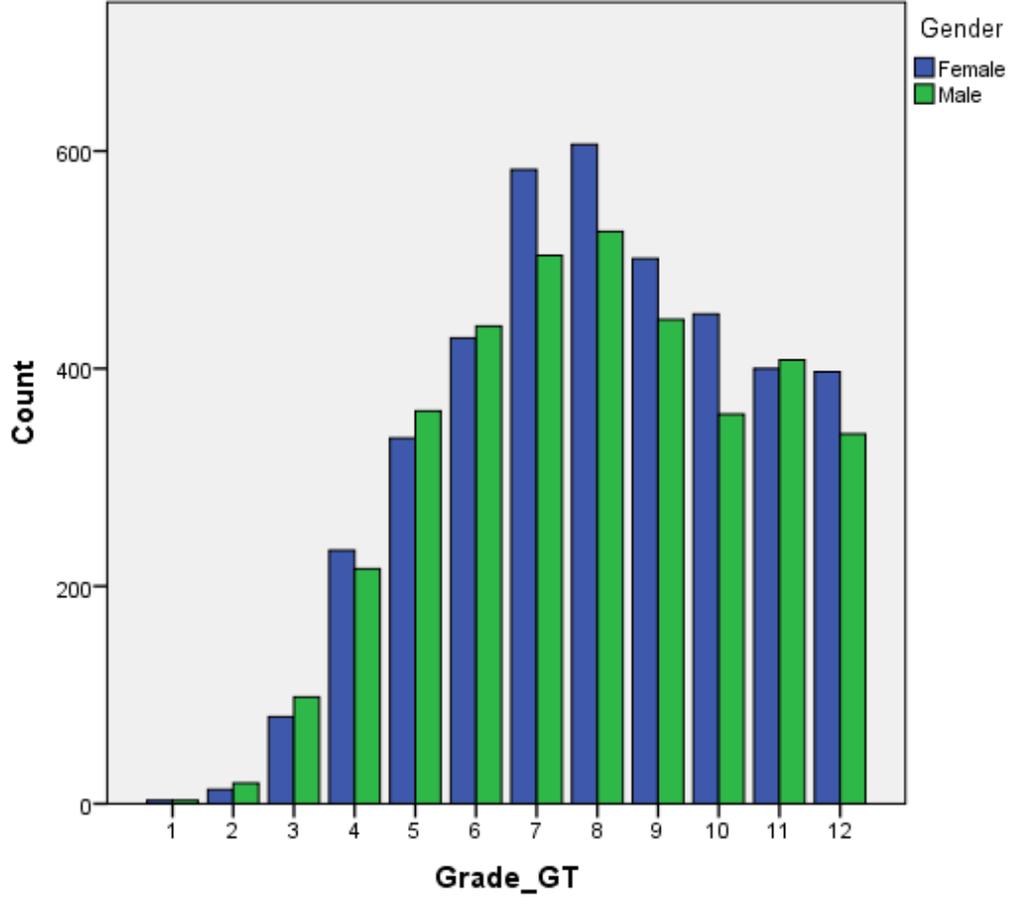
Table 5 displays the demographics of gifted and talented students compared to all students.

Table 5: Demographics of all students and G&T students, statewide, 2018

	Proportion of All students	Proportion of Gifted & Talented Students
Number of Students	182,694	7,747
Female	48.3%	52.0%
Male	51.7%	48.0%
Eligible for FRPL	45.0%	21.1%
Not Eligible for FRPL	55.0%	78.9%
White	89.0%	92.1%
Black/African American	3.7%	1.3%
Bi/multi-racial	2.5%	2.0%
Hispanic/Latino	2.3%	1.3%
Asian	1.6%	2.9%
American Indian/Alaska Native/ Native Hawaiian/Pacific Islander	0.9%	0.4%
English Language Learner (ELL)	3.3%	0.5%
Special Education	18.1%	3.3%

Economically disadvantaged students are much less likely than other students to be identified as gifted and talented: while they make up 45% of the student population statewide, only 21% of gifted and talented students are from low-income families. White and Asian students are slightly more likely to be identified as gifted and talented while black, Hispanic, multi-racial and Native American and Pacific Islander students are less likely to be identified as gifted and talented. ELL students are less likely to be identified as gifted and talented: 3% of all students are ELL compared to only 0.5% of gifted and talented students. And while 18% of all students are identified as special needs students, only 3% of gifted and talented students are special needs. Female students are also slightly more likely than male students to be identified as gifted and talented, but evidence from Figure 2 indicates that this does not happen until later grades. Until grade 6 (with the exception of Grade 4), slightly more male students are identified as G&T than female students. Beginning in grade 7, however, female students are more likely than male students to be identified as gifted and talented. During grades 7 through 12th, with the exception of grade 11, female students comprise a slightly higher percentage of all G&T students, greater than their percentage in the overall student population.

Figure 2: G&T Students by grade and gender (2018)



Statewide Expenditure Analysis

For this analysis, spending trends were calculated using FY 2018 G&T expenditure data (Program Code = 4900, Functions 1000 or 2700) disaggregated by expense type. Nearly all of state funding for G&T programming was applied towards salaries and benefits. The total statewide expenditures for G&T programming are described in Table 6.

Table 6: Statewide Expenditures on Gifted and Talented, FY2018*

Object Code	Total Amount FY18	Percent of Total Expenditures
Salaries and stipends (1000-1590)	\$9,508,761	74.9%
Benefits (2000-2990)	\$2,467,923	19.4%
Professional and Technical Services (3000-3520)	\$181,133	1.4%
Other Purchased Services, e.g. student transportation, tuition to private schools, non-payroll personnel, staff PD travel (5000-5910)**	\$167,484	1.3%
General Supplies (6000-6900), including energy	\$252,588	2.0%
Extracurricular Field Trips Transport (8500)	\$29,920	0.2%
Other: Property services, Equipment, & Misc. Related Expenditures	\$87,659	0.7%
Total	\$12,695,468	100.0%

*Note: includes spending at all public schools, including public charters.

**Tuition payments to other districts within the state (Object code 5610, \$49,699) and tuition payments to state or other governmental organization for specialized instruction services (Object code 5690, \$25,859) were excluded to avoid double counting.

District-Level Spending Analysis

In FY 2018 there were 153 out of 193 regular public SAUs (excluding charters) with G&T expenditures, ranging from \$106 to \$307,405. Average and high poverty districts were almost twice as likely as low poverty districts to report zero G&T expenditures (See Table 7). High poverty districts were also more likely to have no attending G&T students: 54% compared to 35% of average poverty districts and 28% of low poverty districts.

Table 7: G&T Expenditures and G&T Participation 2017-18, by District Poverty Level

	Low poverty	Average poverty	High poverty	All
Number of SAUs	57	76	52	193
% (n) with Zero Reported G&T Expenditures	10% (6)	20% (15)	21% (11)	20% (39)
% (n) with Zero Attending G&T Students	26% (15)	30% (23)	58% (30)	39% (75)

Note: 8 districts did not have reported FRPL information and are not included.

Rural districts were more likely to report zero G&T expenditures, compared to other districts. Rural districts were also more likely to have no attending G&T students. Of those districts with reported expenditures on G&T programming, rural districts were again much more likely than other districts to report no attending G&T students.

Table 8: G&T Expenditures FY2018 and Attendance 2017-18 by District Locale

	City	Suburb	Town	Rural
Number of SAUs	5	19	19	139
% (n) with Zero G&T Expenditures	20% (1)	0%	5% (1)	23% (32)
% (n) with Zero Attending G&T Students	0%	5% (1)	10% (2)	47% (66)

Note: 11 districts did not have reported NCES locale data and are not included.

Moreover, of those districts with reported expenditures on G&T programming, rural districts were again much more likely than other districts to report no attending G&T students: 35% (n=38) of rural districts with G&T expenditures reported no attending G&T students compared to only 2 other districts, one in a suburb and the other in a town.

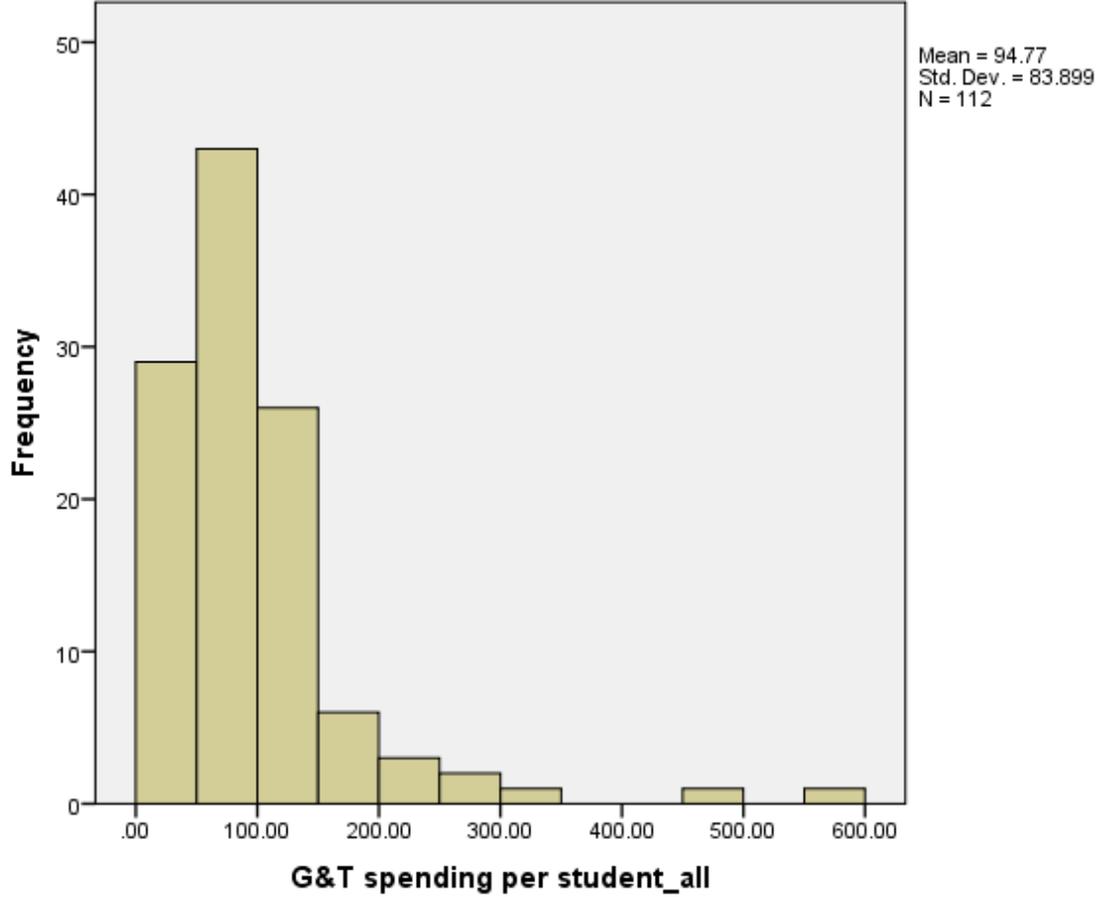
Some districts pay other SAUs (or private schools or other educational organizations) to provide G&T programming for their students. In FY 2018 a total of \$81,854 was spent by 22 districts on tuition to other districts, private schools, education organizations or agencies (Object codes 5610-5690). Total district expenditures on these activities ranged from a low of \$159 to a high of \$13,553. Of the 22 districts that made tuition payments to outside units or personnel for G&T programming, most were rural districts: 14 of the 22 districts (64%) were rural while only 3 suburban districts, 4 town-based districts and 1 urban district made outside payments. Of the 22 districts, 18 were average poverty districts, 2 were low poverty districts, and 2 were high poverty districts. Large districts with more than 1,200 students (11) made half of districts making outside tuition payments for G&T programming, 5 were small districts with fewer than 300 students, and 6 were districts with 300 to 1,200 students.

Per Pupil Spending Analysis

For per pupil analysis we use only those regular public school districts with both reported G&T expenditures and attending G&T students. Of the 192 regular public districts, 112 have both attending G&T students and non-zero G&T expenditures recorded for 2018.

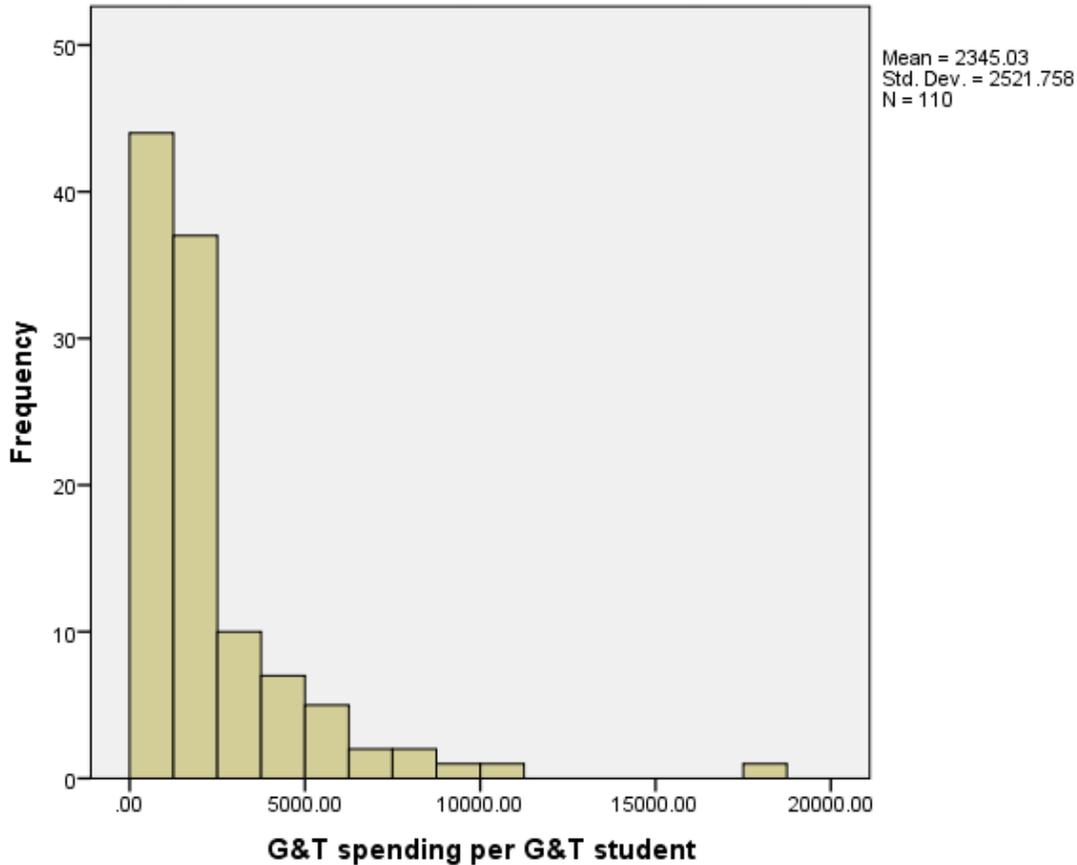
Among these districts, average per pupil spending on G&T was \$95 (based on total enrollment for 2017-18); the median per pupil spending amount was significantly lower at \$82, reflecting wide variability in per-student expenditures. Per student G&T spending ranged from \$0.88 to \$586, with 75% of districts spending less than \$116 per attending student. Figure 3 shows the range of per pupil (total enrollment) spending in FY18 on G&T in all regular public SAUs with non-zero expenditures and attending G&T students.

Figure 3: Per Student (total enrollment) G&T spending, 2018



Among the regular public SAUs with both G&T attending students and non-zero expenditures, the average amount spent per **G&T student** was \$2,345 (median: \$1,677) and the range in per G&T pupil spending was \$12 to \$17,533. As Figure 4 shows, most districts (74%) spent less than \$2,500 per G&T student.

Figure 4: Per Student (G&T enrollment) G&T spending, 2018



The districts spending more than \$2,500 per G&T student tended to be smaller and operate G&T programs for fewer numbers of students. The lower-spending group had a median total district enrollment of 1,182 and provided G&T services to a median of 65 students. By comparison, the higher-spending group had a median enrollment of 480 and had only 17 attending G&T students. This suggests that larger G&T programs are able to operate at a lower per-pupil cost by achieving economies of scale, an effect seen in other components of the funding formula (e.g. special education and English Learning).

Per Student Spending Comparisons by District Type

Districts provide services differently throughout the state, and serve different types of populations. When considering issues of access and equity, we must also look at the availability of programming and the resources given in each community. We examined per pupil G&T expenditures, both overall and by G&T students specifically, by district poverty level and rurality.

Per pupil spending was disaggregated based on the percent of students that were eligible to receive free or reduced price lunch. Districts within ½ standard deviation (9.5%) of the statewide mean of 48.6% poverty (39.1% to 58.1%) were considered to be of average poverty. Low poverty districts were those with FRPL rates less than 39.1% and high poverty districts were those with FRPL rates greater than 58.1%. We report overall statewide per student spending disaggregated by district poverty level as well as district-level means, medians and ranges (Table 9).

Table 9: Per pupil spending on G&T by District Poverty Level

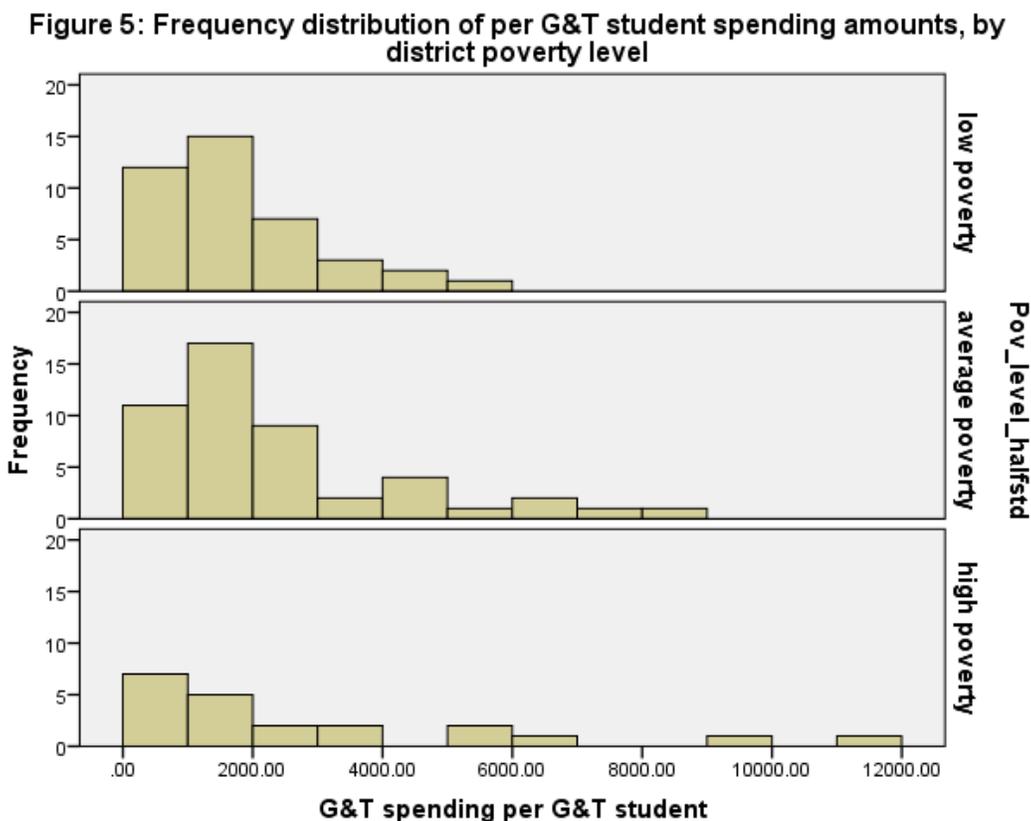
	Low poverty	Average poverty	High poverty	All districts
# of districts	40	49	21	110
Total student enrollment	48,358	66,438	26,005	140,801
Total G&T enrollment	2,814 (5.8%)	3,321 (5.0%)	1,426 (5.5%)	7,561 (5.4%)
Median SAU attending students	1,132	1,008	706	962
Median SAU G&T enrollment	50	49	19	41
Total G&T expenditures	\$4,120,161	\$5,544,263	\$1,583,246	\$11,247,670
G&T Spending per all enrolled pupils				
Statewide per pupil spending-total enrollment	\$85	\$83	\$61	\$80
District-level per pupil spending – total enrollment	median: \$85 mean: \$91 range: \$2-307	median: \$83 mean: \$103 range: \$1-\$586	median: \$49 mean: \$83 range: \$4-\$490	median: \$82 mean: \$95 range: \$1-\$586
G&T Spending per G&T pupil				
Statewide per G&T student spending	\$1,464	\$1,669	\$1,110	\$1,488
District-level per G&T student spending	median: \$1,438 mean: \$1,741 range: \$53-\$5,032	median: \$1,800 mean: \$2,639 range: \$12-\$17,533	median: \$1,639 mean: \$2,808 range: \$100-\$11,107	median: \$1,676 mean: \$2,345 range: \$12-\$17,533

*Sample includes only those districts with reported G&T expenditures and attending G&T students. Brunswick and RSU 23 are excluded because of changes in G&T identification practices (see methods section).

The overall statewide average per student (based on total enrollment) spending on G&T programming is about \$20 per student lower for high poverty districts, with low and average poverty districts spending about the same amount per student. At the district level, average and median per student spending was also lowest among high poverty districts. Because G&T

funding is based on prior expenditures, this is likely a reflection of increased budget constraints in districts with lower property wealth; higher poverty districts generally raise less local funds for education through each mil of property taxes.

The overall statewide per G&T student spending was also lowest for high poverty districts, although this time low poverty districts came in second behind average poverty districts. The same pattern was found at the district level when comparing median spending per G&T student by district poverty level. However, when comparing average spending per G&T student, high poverty districts spent the most, \$169 more than average poverty districts and \$1,067 more than low poverty districts. Averages are impacted more by extreme values than medians. As can be seen from Figure 5 below, high and average poverty districts tend to have fewer low spending districts and more high spenders per G&T pupil, which pulls the mean up; low poverty districts tend to have more low spending districts and no outlying high spenders. As explained above, this is at least partially explained by the number of small rural districts operating G&T programs for low numbers of students, resulting in higher per-pupil costs.



**Excludes three very high spending districts (2 average and 1 high poverty, >\$18,000 per G&T pupil) in order to optimize the scale and thus better illustrate dominant spending patterns.*

The fact that lower poverty districts tend to have lower per G&T student spending might reflect differences in economies of scale, existing capacity, or cost differences by location. Low poverty districts tend to be larger and located in the suburbs while average and high poverty districts tend to be smaller and are more likely to be in towns or rural areas as demonstrated in Table 10.

Table 10: Distribution of districts by poverty level and locale

	Low poverty	Average poverty	High poverty
Suburban & City	33%	15%	5%
Town & Rural	66%	85%	95%

We also examined per student spending by district locale (see table 11). Rurality data was obtained from NCES.¹⁵

Table 11: Per pupil spending on G&T by District Locale Type*

	City	Suburb	Town	Rural
# of districts	4	17	16	69
Total enrollment (Overall Average)	18,839 (4,710)	32,059 (1,886)	28,855 (1,803)	58,488 (848)
# G&T students (Overall Average)	979 (5.2%) (245)	1,799 (5.6%) (106)	1,479 (5.1%) (92)	3,120 (5.3%) (45)
Total G&T expenditures	\$1,121,455	\$2,893,390	\$1,939,971	\$5,010,677
Statewide per pupil spending-total enrollment	\$60	\$90	\$67	\$86
District-level per pupil spending – total enrollment	Median: \$69 Mean: \$65 Range: \$31-93	Median: \$82 Mean: \$93 Range: \$42-196	Median: \$78 Mean: \$78 Range: \$5-230	Median: \$78 Mean: \$98 Range: \$1-586
Statewide per G&T student spending	\$1,145	\$1,608	\$1,312	\$1,606
District-level per G&T student spending	Median: \$1,599 Mean: \$1,527 Range: \$464-2,445	Median: \$1,677 Mean: \$2,072 Range: \$569-7,715	Median: \$1,623 Mean: \$2,084 Range: \$100-5,455	Median: \$1,639 Mean: \$2,553 Range: \$12-17,533

*Sample includes only those districts with both G&T expenditures and attending G&T students. 11 districts did not have data in NCES.

The overall statewide average based on *total enrollment* is lowest for the four city-based schools and highest among both suburban and rural schools. At the district level a similar pattern

¹⁵ <https://nces.ed.gov/>

was found, although the differences among medians, which are less impacted by more extreme values, are narrower.

Overall statewide spending *per G&T student* follows the same pattern as per student spending based on total enrollment: the overall statewide average is lowest for the four city-based schools and highest among both suburban and rural schools. The same is generally true of median per-G&T pupil district spending, and again differences are narrow using median values. There is less than an \$80 per-G&T-pupil gap between the lowest (city) spenders and the highest spending (suburban) districts.

However, an illuminating pattern emerges when looking at mean per G&T pupil spending at the district level. Average spending per G&T student is far higher among rural districts: rural districts spent on average \$1,026 more per G&T student compared to the 4 urban districts, \$481 more than the suburban districts, and \$469 more than town-based districts. This pattern is likely driven by the shape of the per-G&T pupil distribution shown in Figure 5 (with a wider spread of per-G&T pupil spending in high poverty districts) since 95% of higher poverty districts are in rural or town locales. Small programs typically require higher per-pupil spending as they are unable to achieve economies of scale.

Conclusions & Policy Implications

When the EPS funding model was implemented in 2005, several of its (comparatively) smaller components were provisionally implemented as expenditure-based with the intent of eventually developing more evidence-based and equitable models for adequate funding. The special education model was the first to be developed and implemented on a delayed timeline; a funding model for Career and Technical Education was more recently added. The Gifted and Talented component is the only remaining funding element that is based on an expenditure model, where a district's prior spending is the sole determinant of its allocation. Expenditure-driven funding models are known to often result in disparities in education funding driven by varying levels of community wealth. The findings of this report affirm the apprehension that the current funding levels for G&T are not equitable. Current processes favor wealthier communities in general, and also are more likely to benefit wealthier students within each community.

The first findings presented in this report are also among the most important for further consideration: the distribution of students identified as “gifted and talented” is uneven. As shown in Table 5, White, Asian, and female students are identified as G&T at higher rates than their

proportion in the general student population, while other students of color and males are underrepresented. Students who are not economically disadvantaged are more than twice as likely to receive G&T services as their disadvantaged peers. Students who are receiving services for English Language Learning or Special Education are also less likely to be identified for G&T supports. These findings raise questions: Are the current practices for identifying G&T children equitable? Do all Maine students have an adequate opportunity to receive enrichment activities to help them reach their full potential?

These concerns are compounded with the findings related to identification rates and per-pupil spending in higher poverty districts. Higher poverty districts were twice as likely as low-poverty districts to report zero G&T students (Table 7). Higher poverty districts that did have both G&T students and G&T program expenditures spent less per enrolled pupil than lower poverty districts. The data also show a rural-urban divide (Table 8). And although spending per G&T pupil was higher in higher poverty districts, this is likely attributable to the challenges of providing services for a small number of identified G&T students in small, rural districts rather than provision of a higher quality of services. Rural schools tend to be higher poverty, and also face the challenge of operating smaller programs for fewer students.

As depicted in the background section of this report, the most widely-used alternative to an expenditure-based funding mechanism is a formula that provides a more consistent funding amount per student. Per-pupil funding would address many of the inequities along socioeconomic lines that are evident from this analysis. There are three considerations for developing a per-pupil funding allocation in the EPS model: 1) use of a fixed dollar amount per student vs. a per-pupil weight that is proportional to the individual district's overall base rate; 2) provision of funding on a census basis vs. funding per pupil identified as G&T; and 3) whether or not to target the funding so that it must be spent on pre-approved activities related to G&T programs.

However, Baker and Friedman-Nimz (2018) point out that one of the challenges of using per pupil weighting is that "smaller districts may have too few students to generate useful levels of aid" (p.44). This is illustrated in the high per-G&T pupil spending in higher poverty districts in order to provide services to a limited number of students, which nevertheless translates to less overall funding per enrolled pupil (i.e. lower overall funding levels). Thus it may also be advisable to implement a small-program adjustment, such as that currently used in the EPS

special education formula or the ELL program student weights. Table 11 below summarizes the key decision points around each option.

Table 11. Advantages of EPS Funding Options for Consistent G&T Allocations

	PROS/CONS	EPS Examples & Notes
Fixed vs. proportional per-pupil amount		
Pupil dollar amount	<ul style="list-style-type: none"> • Simplicity, easy to understand • Consistent funding basis from year to year 	Teacher professional development, Co- and Extra-curricular programs
Pupil weight	<ul style="list-style-type: none"> • Accounts for varying costs of living / salaries across the state (regional adjustment) • Can accommodate differing program size needs via tiered weight system 	Economically disadvantaged students, special education base weight
Pupil Basis		
Census (total enrollment)	<ul style="list-style-type: none"> • Simplicity: easy to understand; based on readily-available total enrollment data • Assumes a consistent identification rate in each district and thus not influenced by district-level identification practices • Less fluctuation from year-to-year based on G&T identification practices (i.e. can maintain consistent levels of programming) • Allows flexibility in identification practices (i.e. does not require G&T identification for districts choosing low-barrier inclusion models) 	Staff ratios Facilities & operations
G&T Identified Pupils	<ul style="list-style-type: none"> • Closer estimate of expected costs based on the reported number of children receiving services 	Weighted pupil counts for ELL, special education, econ. disadvantaged, etc.
Accounting requirements		
Targeted	<ul style="list-style-type: none"> • Ensures that funds allocated for G&T are used for the intended purpose 	Student assessment, Technology resources, PreK-2 Pupils
Non-targeted	<ul style="list-style-type: none"> • Allows more flexibility to use funds in ways that may not be narrowly envisioned by policymakers; • Allows redirection of funds to other priorities if student needs can be met at a lower cost 	Default for most of the EPS allocation

Another possible method of improving the provision of G&T services in the state would be to create regional G&T programs. Examining the map of program funding (Appendix A) shows that there might be an opportunity to support more rural schools with regional Gifted programming by pooling resources and students to achieve economies of scale. It is possible that creating regional programs for G&T programs and administration would counteract some of the gaps in program availability that currently exist in rural areas, and also increase access to qualified and trained G&T teachers in shortage areas of the state. It may also benefit G&T students in rural areas to have opportunities to interact with peers from other schools with similar learning needs.

Next Steps

The data analyses in this report raise several questions that should be addressed in parallel with policy discussions about developing a more equitable funding model. First, it would be advisable to ground the conversation in a thorough literature review about the evidence base for various types of G&T programs and their impacts on students' academic and social outcomes. An evidence-based funding model should ideally be based on best practices that have been shown to have beneficial outcomes for students.

Secondly, the data on Maine's current practices for identification and reporting of G&T students merits further investigation. The large number of districts that report spending on G&T but do not report having any enrolled students identified as G&T raises concerns about data integrity and/or wide variation in practice, which provides a shaky foundation for funding calculations. This need is further bolstered by the narrative reports from districts that are using an inclusive approach to providing student supports via differentiated instruction in the regular classroom, presumably at a lower cost per pupil than pull-out programs.

In summary, existing expenditure data captures a wide variety of practices and may not be suitable for an estimate of the level of funding needed to provide adequate programs. In order to ensure that programs are adequately funded, additional background information may be needed to select districts with expenditure levels that can be used to estimate initial per-pupil funding levels. It may be feasible to conduct this work within existing state resources by nominating the topic for inclusion in the annual MEPRI work plan with the legislature.

Appendix A: Map of Per Pupil Spending on G&T Programs, in Relation to Statewide Median Per Pupil Amount (\$42.97)

GTArcGISRevision

SpendingCategory

- Well Above Median Spending (>\$99.64)
- Above Median Spending (>\$42.97)
- Below Median Spending (<\$42.97)
- No Spending G&T (\$0)

